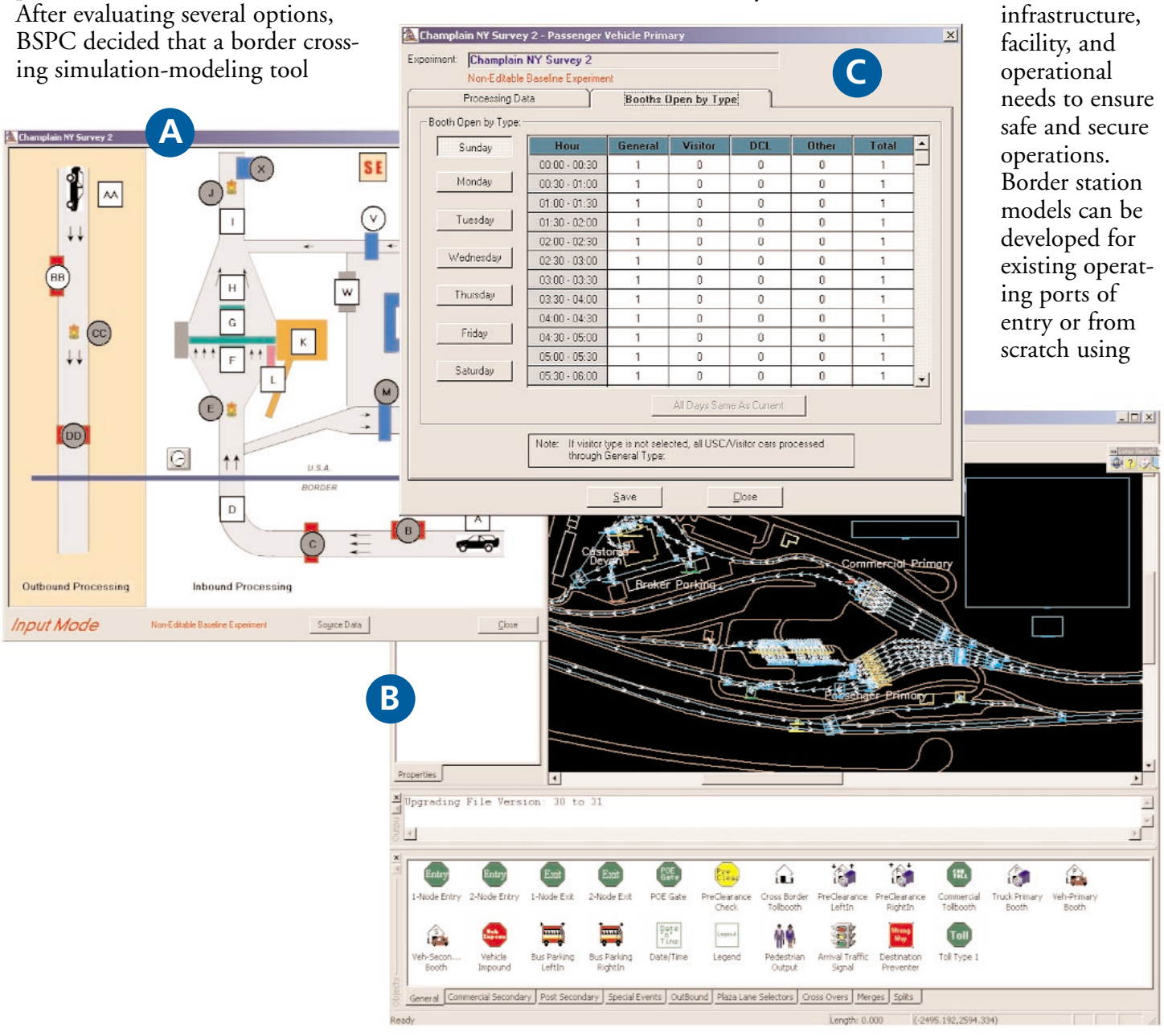
Border Wizard

The Federal Highway Administration's Office of Freight Management and Operations, in cooperation with the Border Station Partnership Council (BSPC), is developing an analytical tool to assist in the coordination of improvements to border ports of entry. BSPC, a coordinating body of the Federal Inspection Services, determined that a scientific methodology was needed to plan for future infrastructure needs at U.S. borders. After evaluating several options, BSPC decided that a border crossing simulation-modeling tool would be most effective in meeting its objectives. To develop this tool, an exhaustive list of facilities and infrastructure needs at border stations was made and presented to industry. As a result of these efforts, the Border Crossing Simulation Model (Border Wizard) was developed and is now in use.

Border Wizard can simulate all federal inspection activities at any land border station to determine infrastructure, facility, and operational needs to ensure safe and secure operations. Border station models can be developed for existing operating ports of entry or from scratch using



engineering designs or preliminary design plans. Port facility and operational data are entered into the model using data entry screens compliant with Microsoft Windows. Sample facility data include the layout of the station and number of inspection booths, parking spaces, and warehouse slips. Operational data include the kind of equipment used, federal/contractor personnel conducting inspections, and processes in use by all agencies. These data examples are just a very small subset of the types of information that can be included in the model. The latest version of Border Wizard provides all the tools needed to graphically construct and/or modify border station design and operations.

The following illustrations depict how a border simulation model is developed. First, the operational characteristics of an existing land border station (illustration A) are entered into the model program. If a drawing exists for the actual border station or a proposed border station, operating components of the port can be overlayed on this image. Paths for the movement of cars, trucks, and pedestrians are then added to the model (illustration B). When this portion of the model is completed, demand and operating rules are then added (illustration C). Results of the model can be viewed as an anima-ted representation of the border station with visual queues to indicate when ports of the border station exceed capacity.

In January 2002, the General Services Administration (GSA) directed that all ports of entry doing feasibility studies and prospectuses use Border Wizard for project justification and evaluation. GSA estimates that, since directing the use of Border Wizard, it has saved between $5 million to $10 million in unnecessary or redundant capital investments at the 10 ports of entry for which Border Wizard has been used.

Three additional ports of entry along the southern border are scheduled for major capital investments in fiscal years 2002 and 2003. By using Border Wizard, GSA estimates that total savings for these three locations will be at least $15 million for items reviewed to date, and may run as high as $25 million to $30 million in total cost savings when all work items are evaluated.

As an acknowledgement of the value of Border Wizard, GSA has directed an additional $500,000 in fiscal year 2002 funds for further development and application of the Border Wizard. These additional funds were charged against the capital savings documented since January 2002.

U.S. Customs is also using the simulation model to evaluate proposed inspection methods and routing in commercial operations at both northern and southern border stations. And, the Immigration and Naturalization Services is now collecting data at all major border stations in preparation for using Border Wizard to evaluate inbound and outbound inspection operations and assess the effects of changes in security at U.S. borders.

The U.S./Canada version of Border Wizard, financed partially with Revenue Canada funds, made available for use in the U.S. contract, has been completed. The prototype of the Ambassador Bridge, Detroit, will be used to test the feasibility of reversing inspection on the bridge, an option that may be desirable for security reasons. The test will also determine the effects of reversing inspection on the transportation system.

In the future, Border Wizard will permit users to run multiple border stations simultaneously or comparatively while monitoring the effect of one to another. This capability will be useful in analyzing proposed new border station development or in determining when an area will reach capacity and a new border station should be developed. GSA is also working with FHWA to link demand and capacity modeling tools, which are standard for transportation, to Border Wizard for use in transportation corridor analysis. This capability should be available by July 2002.

For More Information, Please Contact

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